

Portable, Solid-State Light Sources for Field Radiometric Calibrations, Phase II

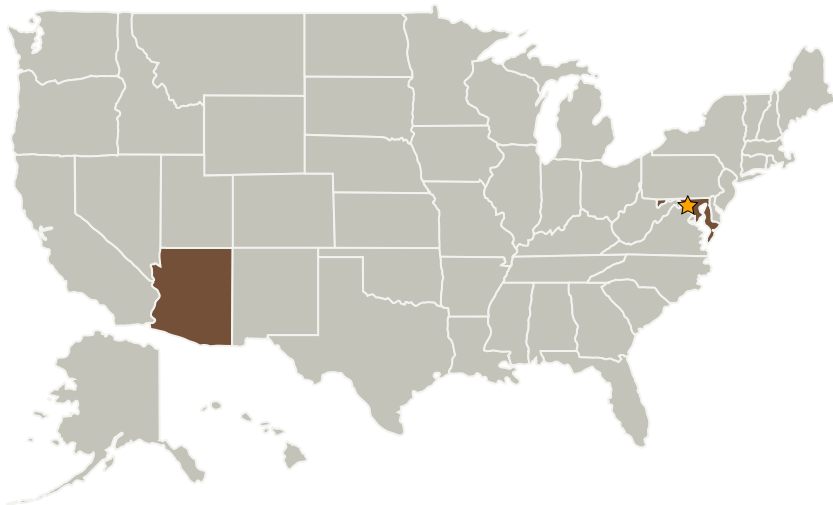
Completed Technology Project (2007 - 2009)



Project Introduction

Various Earth Science fields require well-calibrated field radiometers whose calibrations must be tracked and verified in the field. NASA has long recognized requirement. However, these activities require specialized light sources that typically require high power, are bulky and difficult to use in the field, and do not work with all types of radiometers. We propose a next-generation portable, ultra-stable, lightweight and highly versatile light source based on light-emitting diodes (LEDs). Recent advances in LEDs include higher power, efficiency, and a wider range of wavelengths (from UV to IR). These advances, coupled with LEDs' inherent suitability for electronic feedback stabilization, make them excellent candidates for more compact and power-efficient calibration sources. During Phase I we showed that we can implement light sources with the desired characteristics, using current technology. We identified and tested LED devices, measurement and stabilization techniques, and physical configurations. In Phase II we will build prototypes and implement a program for test and evaluation, and refine the design based on test results. At the conclusion of Phase II we will be ready to produce and sell a commercial version.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
HOBILabs, Inc.	Supporting Organization	Industry	Tucson, Arizona

Primary U.S. Work Locations	
Arizona	Maryland

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.1 Remote Sensing Instruments/Sensors
 - └ TX08.1.1 Detectors and Focal Planes